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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/792,135

03/02/2004

Haim Goldberger

P06381US00

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22885

7590

10/20/2004

MCKEE, VOORHEES & SEASE, P.L.C.

801 GRAND AVENUE

SUITE 3200

DES MOINES, IA 50309-2721

EXAMINER

THOMAS, ERIC W

ART UNIT

PAPER NUMBER

2831

DATE MAILED: 10/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/792,135

Applicant(s)

GOLDBERGER, HAIM

Examiner

Eric W Thomas

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 September 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) 10-18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 and 19-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>3/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

INTRODUCTION

The examiner acknowledges, as recommended in the MPEP, the applicant's submission of the amendment dated 9/30/04. At this point, claims 19-32 have been added and claims 10-18 have been withdrawn from consideration. Thus claims 1-32 are pending in the instant application.

Election/Restrictions

Applicant's election of invention I in the reply filed on 9/30/04 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 27-32 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 27 is confusing. The examiner is not sure if applicant is trying to claim a final product. It is noted that fig. 9 of the instant specification is a step of forming the

capacitor (the final step is cutting the individual capacitors from the series as seen in claim 28).

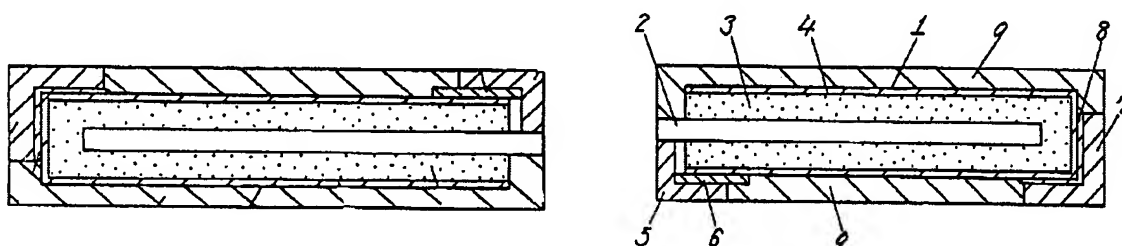
Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-6, 8-9, 19-22, 24-31 are rejected under 35 U.S.C. 102(b) as being anticipated by Masuda et al. (US 6,400,556).



Masuda et al. disclose in fig. 1, a surface mount flip-chip capacitor comprising: a wire (2) having opposite first and second end surfaces and upper and lower face surfaces; a conductive powder element (3) electrically connected to the wire and covering a portion of the wire upper surface; an insulative material (col. 3 lines 25-35) surrounding at least a portion of the conductive powder element and a portion of the wire upper face surface; a first terminal formed by a first body of conductive material (5) disposed to the first end surface of the wire and a portion of the insulating material; and

a second terminal (7) formed by a second body of conductive material disposed over and being electrically connected to the upper end of the conductive powder element.

Regarding claim 2, Masuda et al. discloses the first end is an anode and the second end is a cathode.

Regarding claim 3, Masuda et al. disclose the conductive powder element is made of powder (col. 3 lines 20-26).

Regarding claim 4, Masuda et al. disclose the powder is Ta (embodiment 4).

Regarding claim 5, Masuda et al. disclose the powder is a substrate Ta (embodiment 4 – sintered tantalum).

Regarding claim 6, Masuda et al. disclose the claimed invention. Regarding the limitation “the powder has been electrophoretically deposited upon the wire” is the method of forming the device. The method of forming the device is not germane to the issue of patentability of the device itself. Therefore, this limitation has not been given patentable weight.

Regarding claim 8, Masuda et al. disclose the conductive powder element has a capacitance-voltage of 80000 (see fig 9).

Regarding claim 9, Masuda et al. disclose the anode wire is a parallelepiped (see fig. 2).

Regarding claim 19, Masuda et al. disclose a surface mount flip-chip capacitor comprising a wire (2) having opposite first and second end surfaces and upper and lower face surfaces; a conductive powder element (3) upon the wire covering a portion of the upper face surface, the conductive powder element having a cathode end, an

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anode end, and conductive powder element sides extending between the anode and cathode ends; a layer of insulation material exterior of, and in covering relation over the cathode end and the conductive powder element sides whereby the wire extends below and has a protruding beyond an exterior surface of the layer of insulation material; an anode layer of conductive material over the wire first end and a portion of the exterior surface of the insulation material so that the anode layer of conductive material is in electrical contact with the wire first end, whereby electrical continuity is achieved from the anode end of the conductive powder element, through the wire to the anode layer of conductive material; a cathode layer of conductive material over at least a portion of the cathode end of the conductive powder element approximately level with the anode layer of conductive material and in electrical contact with, the cathode end of the conductive powder element.

Regarding claim 20, Masuda et al. disclose the claimed invention. Regarding the limitation "the powder has been electrophoretically deposited upon the wire" is the method of forming the device. The method of forming the device is not germane to the issue of patentability of the device itself. Therefore, this limitation has not been given patentable weight.

Regarding claim 21, Masuda et al. disclose the powder is Ta (embodiment 4).

Regarding claim 22, Masuda et al. disclose the powder is a substrate Ta (embodiment 4 – sintered tantalum).

Regarding claim 24, Masuda et al. disclose the conductive powder element has a capacitance-voltage of 80000 (see fig 9).

Regarding claim 25, Masuda et al. disclose the anode wire is a parallelepiped (see fig. 2).

Regarding claim 26, Masuda et al. disclose the wire is a foil sheet portion.

Regarding claim 27, Masuda et al. disclose a surface mount flip-chip capacitor comprising: a foil (2) having opposite first and second end surfaces and upper and lower face surfaces; a conductive powder element (3) upon the wire deposited on a portion of the upper face surface the conductive powder element; the capacitor having a cathode end, an anode end, a layer of insulation material exterior of, and in covering relation over the cathode end and sides, whereby the foil extends below and has a protruding foil portion extending beyond an exterior surface of the layer of insulation material; and anode layer of conductive material (5) over the foil first end and a portion of the exterior surface of the insulation material so that the anode layer of conductive material is electrical contact the foil first end, whereby electrical continuity is achieved from the anode end of the conductive powder element, through the foil to the anode layer of conductive material; a cathode layer of a conductive material over at least a portion of the cathode end of the conductive powder element approximately level with the anode layer of conductive material and in electrical contact with, the cathode end of the conductive powder element.

Regarding the limitations, “a series of surface mount flip-chip capacitors, a plurality of conductive powder elements that have been electrophoretically deposited upon the foil, the conductive powder elements spaced apart from each other and covering a portion of the upper face surface” are part of a process of making the capacitor. The method of forming the device is not germane to the issue of patentability of the device itself. Therefore, this limitation has not been given patentable weight.

Regarding claim 28, Masuda et al. disclose the claimed invention (single solid electrolytic capacitor). Regarding the limitation, “a cut point in the layer of insulation adjacent the anode layer to form an individual surface mount flip-chip capacitor” is the method of forming the device. The method of forming the device is not germane to the issue of patentability of the device itself. Therefore, this limitation has not been given patentable weight.

Regarding claim 29, Masuda et al. disclose the powder is Ta (embodiment 4).

Regarding claim 30, Masuda et al. disclose the powder is a substrate Ta (embodiment 4 – sintered tantalum).

Regarding claim 31, Masuda et al. disclose the conductive powder element has a capacitance-voltage of 80000 (see fig 9).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 7, 23, and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Masuda et al. (US 6,400,556) in view of Pathare et al. (US 5,986,877).

Regarding claims 7, 23, and 32, Masuda et al. disclose the claimed invention except for the conductive powder element has a density between 3-8 g/cc.

Pathare et al. teach the use of an improved conductive powder element having a density of 5-6 g/cc (see fig. 8).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use the sintered anode of Pathare et al., in the capacitor of Masuda et al., since such a modification would provide an anode having high powder density, and since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

3,440,495 – discloses a capacitor having a similar structure.

4,090,231 – discloses a capacitor having a screen-printed solid electrolytic capacitor.

In order to ensure full consideration of any amendments, affidavits, or declaration, or other documents as evidence of patentability, such documents must be submitted in response to this Office action. Submissions after the next Office action, which is intended to be a final action, will be governed by the requirements of 37 CFR 1.116 which will be strictly enforced.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric W Thomas whose telephone number is 571-272-1985. The examiner can normally be reached on M,Tu,Sat 9 am - 9:30 pm; W, Th, F 6 pm -10:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dean Reichard can be reached on 571-272-1984. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



10/9/04

Eric W Thomas
Examiner
Art Unit 2831

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